

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

ScienceDirect

Procedia - Social and Behavioral Sciences 102 (2013) 532 – 542

---

---

**Procedia**  
Social and Behavioral Sciences

---

---

6th International Forum on Engineering Education (IFEE 2012)

## The Challenge of Culture: a Reflection on an Effort to Assert Collaboration in a 4-year Office Term

Aswandy\*, Widya Suryadini, Yati Muliati

*Faculty of Civil Engineering and Planning, Institut Teknologi Nasional Bandung, Jl. PHH Mustapha 23, Bandung 40124 Indonesia*

---

### Abstract

During our 4-years office term, collaboration had been our recurring theme, and can be found in various degree of implementation. This article is a report on our pseudo-action research that tries to identify the organizational culture that affect our effort in establishing collaboration between departments in the Faculty of Civil Engineering and Planning at Itenas. We use Schein's three level of culture to dissect into the artifacts, espoused beliefs, and assumption that related directly to our effort in establishing collaboration as a shared value. Factors affecting the success/failure of our effort were also discussed in term of approach, leadership, motivation, and setting.

© 2013 The Authors. Published by Elsevier Ltd. Open access under [CC BY-NC-ND license](https://creativecommons.org/licenses/by-nc-nd/4.0/).

Selection and/or peer-review under responsibility of Professor Dr Mohd. Zaidi Omar, Associate Professor Dr Ruhizan Mohammad Yasin, Dr Roszilah Hamid, Dr Norgainy Mohd. Tawil, Associate Professor Dr Wan Kamal Mujani, Associate Professor Dr Effandi Zakaria.

*Keywords:*organizational culture; Schein's level of culture; collaboration; interdisciplinarity.

---

### 1. Introduction

Higher education institution in engineering is currently at the limelight, for people look up to it to develop or invent any engineering solution that can address our contemporary societal and environmental problems. Through the course of its history, engineering education come to an understanding that they need to produce man power [in engineering] that is flexible enough to adapt to changes [1]. This flexible engineer should be able to integrate knowledge in such a way that it can make connections between events, integrate them so as to benefit the community, skilled at analysis and synthesis, and technologically astute. An important ability to cultivate from students in engineering is the ability to bridge the boundaries between discipline and apply an integrative

---

\*Corresponding author. Tel.: 62-22-7272215ext 156

E-mail address: [aswandy@itenas.ac.id](mailto:aswandy@itenas.ac.id)

approach to problems. The article further discuss how this concept of flexibility affect the engineering education in general, with a single apparent trait: the significance of interdisciplinarity and collaboration.

The importance of collaboration had been our main concern since the beginning of our office term as managers at the faculty in 2008. Collaborative approach to solving social, political, and economic problems are now fairly common throughout the world as shown by [2], especially when we address the issues in our very subject, that is the built environment. With our graduates increasingly enter the workforce as professionals in a wide range of field within the boundaries of public administration, there are a growing concern for cultivating students with collaborative attitude and capability to work in an interdisciplinary network. Newswander & Newswander [3] pointed out that public administrators have always drawn from a host of different discipline. The term 'public administrator' here also refer to a wider breadth of field that constitute public administration today, which constitute not only civil servants in governmental agencies, but also other sector such as public enterprises and NGOs [4]. The requirements for public administrator today are influenced by many changes in information technology, globalization, as well as cultural changes that occurred vastly. To educate many that may join public administration is to provide a curricula that can embed that many changes, as well as that many different fields that now constitute the discipline that implicated in public works management. Again appear a single apparent trait of interdisciplinarity and collaboration.

Collaboration is often seen as a misunderstood construct [2] because it probably is a multifaceted construct. Collaboration also carry varied meaning, ranging from the most inward to the most outward projection, at the interorganizational, intraorganizational, and interprofessional levels. Because it is a value-laden construct, we believe that collaboration should be asserted in our faculty as a norm that might serve as culture. Since the notion of culture assumes shared values and beliefs, culture in an organizational context implies a collective comprehension and acceptance of values throughout the organization. Schein [5] defined organizational culture as "a pattern of shared basic assumptions that was learned by a group as it solved its problems of external adaptation and internal integration." Schein implied that organizations "learn" by engaging and solving problems both from the external environment and within the organization itself. As organizations formulate strategies and define expected behaviours, they establish the *modus operandi* that all team members are expected to adopt. *Value congruence* refers to a "fit" between the perception of the individual and the climate of the organization. Employees exhibit more effort, loyalty and dedication to a firm that not only recognizes their contributions, but also shares their value.

The purpose of this article is to identify the organizational culture that affect our effort in establishing collaboration between departments in the Faculty of Civil Engineering and Planning at Itenas. We draw on our 4-years experience (2008-2012) as Dean, Vice Dean for Academic and Students' Affairs, and Vice Dean for Financial and General Affairs, which responsibilities include: managing the administrative affairs required to support the process of learning, research, and community services; managing human resources, for both academic and non-academic staffs; managing the quality assurance activities; and coordinating students co-curricular activities at the faculty level.

## 2. Methodology

This article is a condensed and truncated report of a pseudo-action research we conducted during our 4-years office term as managers of a faculty. It provides a positivist approach of cultural analysis using Schein's three levels of culture as framework [5]. It consisted of (1) artifacts, the most observable level which includes all the phenomena that one sees, hears, and feels; (2) espoused beliefs and values, this not-so observable level are actually represent the difference between stated values and operating values; and (3) assumptions, the unconscious driving forces that collectively guide behavior. We use observable artifacts in the form of documents as inputs, but the other two levels will have to be assessed only by our experience in managing the faculty, using recorded evaluation and analysis whenever possible, but mostly will have to rely on our observation and

judgment we had established and used as inputs in the process of decision-making and daily managerial activities throughout our office term between 2008 and the first semester in 2012. These three levels are analyzed within the context of our effort in establishing collaboration as the values on which the units within the faculty should operate. This implies that other decisions, programs, or activities that were not directly related to establishing collaboration within the department will be omitted from discussion.

This article will be divided into three parts. The first part will discuss the organizational culture of the faculty and the departments within it, followed by the cultural analysis process which identifies the nature of the climate in each unit that might provide explanation on how things work. The second part will discuss how each of the culture contributes to foster or hinder the achievement of collaborative atmosphere in the faculty. The third part will offer lessons learnt from the experience, in terms of possible strategies and measures to be taken in dealing with the situation if this policy to foster collaboration is to be continued by the next dean and his vices.

### **3. The Faculty of Civil Engineering and Planning**

Our institution is a private institute of technology that was established around the 1985, growing out of a smaller academy founded 10 years earlier. It consists of 3 faculties, with around 4500 undergraduate students and 250 lecturers (data from 2012). The Faculty of Civil Engineering and Planning is directed by a Dean and two vice deans: Vice Dean For Academic and Students Affairs, and Vice Dean For Financial and General Affairs. Our vision is to be a higher education institution in the field of Civil Engineering and Planning that delivers graduates who are self-reliant, innovative, equipped with the spirit of entrepreneur, and actively engaged in the inquiry and development of knowledge, technology, industry, and national culture. Our missions are:

1. To direct the process of learning, research, and community services in the field of civil engineering and planning that significantly contribute toward the advance of knowledge, technology, and industry in the field;
2. To produce graduates who have developed self-reliance, innovative and entrepreneur spirit, and the ability to compete in the global world;
3. To raise awareness toward the contemporary environmental issues that calls for innovative approaches in technology, built environment, and life style;
4. To develop a professional education management;
5. To develop a sustained synergy and collaboration between the institute and stakeholders.

In pursuit of our mission, our faculty has the following aims: to produce graduates in the field of civil engineering and planning with academic and professional excellence; to equip graduates with high morality and ethics within our own national culture; to enable students to develop self-reliance, innovative and entrepreneur spirit, as well as leadership values; to foster the ability to communicate effectively within an interdisciplinary culture; to raise awareness toward an environment-friendly life style and attitude, both as professionals as well as members of society; and to develop the commitment to a life-long learning process.

The Faculty of Civil Engineering and Planning comprises of five departments (starting with the largest student body): Architecture, Civil Engineering, Urban and Regional Planning, Geodetic Engineering, and Environmental Engineering. Each department has its own chair, similar structure of organization, and a semi-autonomous system of decision-making. Curriculum evaluation and development, and the management of learning activities are among the responsibilities of the department, but the standards for both are set by the institute. In 2011, we established new sets of curricula for all departments, with significant changes in our approach to curriculum development. In this new set of curriculum, the learning emphases are put on a pseudo competence-based curriculum, and teachers are encouraged to implement student-centered learning strategy in the classroom. The curriculum also encourages integration and synergy between learning, research, and community service.

For our 4-years office term, we have to propose programs and financial budgeting on an annual basis. Based on an evaluation we conducted early on in the beginning of our office term regarding the position and role of the

faculty, and the perception of the departments about it, we established a basic policy to provide a stronger foundation for the faculty, and to reposition the faculty as the main resource for all educational activities within all departments. We set up programs with collaboration as the main theme, which we believe can serve as the spirit that will assist in the process of establishing our policy. We used the term ‘multidisciplinary’ and ‘interdisciplinary’ to refer to the implementation of collaboration at operational level.

#### 4. The Culture of our Faculty

Most definitions of culture incorporate the idea of a shared philosophy or ideology, or a set of values, beliefs, expectations, and assumptions that guide behaviour [6]. Many believe that organizational culture plays an important role in affecting the performance of an organization, including educational organization which has distinct characteristics that separate it from other kinds of organization. In assessing the culture of the faculty, we look into departments separately because each has unique characteristics of their own. The culture of each department then sum up to characterize the faculty as a whole. In the process, characteristics that differentiate one department from the other are set aside, but not eliminated, to yield the shared characteristics that add up as the characteristics of the faculty. Distinct characteristics that were set aside become an additional consideration upon discussion. In other words, the culture of the faculty will be a combination of the dominant and shared characteristics that can be found in all the departments, but each departments will have its own deviance that suggest characteristics unique of their own.

To give a more general view upon the culture of our faculty, we will look into it using typologies of organization’s culture. Typologies are useful for identifying the predominant culture of an organization, and some suggested that it is strongly related to the organization’s performances. From four Birnbaum’s cultural models, the *Collegial Culture* best fit the culture of our faculty. The main characteristics of this type of culture are shared power and non-hierarchical relationship; people involvement in a high degree of personal interaction; consensus-based decision; and reliance on tradition and precedent. It values flexibility, cooperation, participation, cohesion, and loyalty. Leader in this type of organization was regarded as more of a paternal/maternal model for the organization, in the sense that they were expected to be a role model, to provide a sense of security and problem-solving, as well as to nurture and to take responsibilities for the welfare of the organization. It should be noted that this is more of a scan of the culture, since an organization can have overlap characteristics from each model. For the purpose of giving a picture about the overall atmosphere and the nature of our organization only, this simplified identification should suffice to give an illustration on what kind of cultural environment does our faculty works in, and can support the discussion in this paper. Aside from the general type of organization’s culture, we will also use Schein’s three level of culture to look into the cultural trait that become the main attention in reflecting about our experience in directing the faculty toward a program to develop and assert collaboration into its daily activities.

##### 4.1. Artifacts

Artifacts are the visible and feel-able structure and process of an organization, which often can be easily observed through behavior or felt through the overall physical appearance of the office. Bess and Dee [6] put several categories for artifact i.e. (a) physical environment, (b) social environment, (c) technological output of the group, (d) written and spoken language, (e) overt behavior of members, and (f ) symbols. But since each of the category can overlap, our discussion will not explicitly put data, facts, or aspects into one specific category. Instead, we will discuss it through a series of description of the most observable hard data in the form of documents about normative statements (vision, mission, or aims), programs, and activities.

The first thing we notice about our notion of collaboration is that we do not have any explicit statement about it in our normative statement of vision, mission, nor aims. Despite this condition, we decided that it was best to

put forward collaborative attitude and value as the overall norm that should become the foundation for the faculty to operate within. With this in mind, we set several programs within the framework of fostering collaboration between departments, as well among students and teachers. Those programs are applied to students' association activities, curriculum development, and as guideline for research and community services by lecturers. The programs applied to students and students' association activities were inter-departmental pre-university program that promote intense interaction between students from different departments; joint programs between Students' Association from different departments; and Softskills development program that cultivate collaboration/interdisciplinary perspective.

In the area of curriculum development, we called for each department to develop curriculum that enable interdisciplinarity, joint-operation, and even exchange of lecturers. Each department responded to this call in different manners and in various degree of application. There were departments that provided explicit statement about interdisciplinarity or collaborative attitude in their statement of graduate attributes or course competence, while other departments had no such statement in any of their document of curriculum. One department that made explicit reference to interdisciplinarity in its curriculum implemented further by inviting guest lecturers from various field of knowledge, including those whose field would seem only remotely related to the field of that department at first, but somehow have strong relevance with their core competences and/or graduate attributes. Almost all departments develop curricula that enable students to take elective courses from other department, either from within or outside our faculty. But until the end of our office term, no student had taken this opportunity for cross-field academic enrichment due to technical and administrative constraints. We also sensed that the department had not encouraged their student to take elective courses from outside their own department, but we have yet to understand their true motive for not working on the operational level for their own scheme of inter-departmental collaboration at the curriculum level.

From the aspect of financial planning, we were fully aware that our system of budgeting was flexible enough for all of us to plan and create inter-departmental activities within the faculty, or even between different faculties. To benefit from this flexibility, we had to conduct a detailed preparation for the annual program and activity planning, both at the faculty level as well as in the departmental level. Of course, we planned for collaboration to be emphasized as the key term for planning a program or activity, but in this sense, we might have failed to do so. During our 4-years office term, no formal joint-activities between department had been carried out, but several non-formal joint researches or community services had been established. The establishment of this not-so-formal, and often unplanned, joint activities were enabled by individuals and their personal networking system, without formal recognition from the institute at the beginning. During the course of their activities, the faculty granted full recognition for their contribution as formal and legitimate activities under the supervision and responsibilities of the Dean and related departments.

#### *4.2. Espoused beliefs and values*

Espoused beliefs and values are the senses of what ought to be, as distinct from what is. These beliefs and values are usually shared among members of the organization, established from individual's assumptions about what is right or wrong, or what will work or not. They present as ideals, goals, values, and aspirations which articulated and transformed into ideologies and rationalization that serve as the normative function of guidance for member of the organization [5]. Interestingly, these shared beliefs and values may or may not be congruent with behavior and artifacts due to the degree of abstraction of these beliefs and values that lead to mutual contradictory. Schein asserted that we should be very careful in discriminating espoused beliefs and values that are congruent with the underlying assumptions that guide performance, those that are part of the ideology or philosophy of the organization, and those that are rationalizations or only aspirations for the future. In this article, we do not specify which beliefs and values belong to which kind as Schein had suggested, but instead will work on describing each beliefs and values that we perceived to be related directly with our effort to foster

collaboration, and how that particular relation contributed to the result. We take note that values reflect deeply held feelings of a person toward particular things, people, or actions. They are not readily evident through direct observation, but, instead, must be inferred through an analysis of cultural artifacts, which are directly observable. In this sense, there might not be hard evidence to support our analysis of this espoused beliefs and values because no formal analysis had been conducted during the process of 4 years. We will have to rely on our own observation and analytical judgment for describing this kind of aspect in our faculty.

We noticed that there were shared values among members from all departments about the importance of collaboration or interdisciplinarity. They all strongly believe that collaboration is unavoidable in contemporary world because the problems we are currently facing can only be solved with approaches from different perspective and various multitude. They also acknowledge that interdisciplinarity had become a key term with which all engineers should work, because one of the most important task for engineer is to solve problem of humankind, and the high complexity nature of nowadays problems demand solution that can encompass the multifaceted issues at hand. Thus, our assertion of collaboration will not be rejected from our colleagues' philosophical point of view, since it had already become an agreed value.

However, people in each department also believed that interdisciplinarity only work best when other department join them as subordinate or supporting actor. This might due to a subconscious ego that claim a false belief about the importance or superiority of their own discipline compared to others. For some people, collaboration assumed a leading role for certain discipline, while other subordinate disciplines can only work after this leading discipline arrange and assign the specific job to them. In other sense, collaborative works was seen more as multidiscipline endeavor instead of the interdisciplinary nature that it was supposed to assume.

Consequently, they also believe that working out an interdisciplinary team requires hard work. They have to attune different values and work ethics into that of the team which comprises of more than one discipline, which means more than one mode of thinking, all with their own subconscious ego. This misconception of the difficulty in working together as a multidisciplinary team leads to refusal to go along with the actual act of trying to plan any joint activities, either in learning process, research, or community services. In addition to the hardship of working collaboratively, people have a sense of insecurity in working in joint endeavor. Some tend to believe that the institute does not fully supportive of collaboration effort, especially from administrative perspective. They perceived that many problems might arise during a collaborative work, and these problems should be handled by the faculty or institute. As long as the institute has not install any rules or regulation concerning the plausible problems, they will stay skeptical about working together collaboratively across departments.

#### *4.3. Assumptions*

Assumptions are unconscious, taken-for-granted beliefs and values which determine behavior, perception, thought, and feeling. They are different from values, since most people are not consciously aware of them. If we wanted to look for an organization's assumptions, we might start with five basic underlying assumptions that are manifested in organizational culture: (1) the organization's relation to its environment, (2) the nature of reality and truth, (3) the nature of human nature, (4) the nature of human activity, and (5) the nature of human relationships[5]. This article will look briefly into these five basic assumptions and zooming out several that is highly correlated to the issue of collaboration. This is the most difficult aspect of the level of culture to decipher, some might even deny if they held these assumptions, because of the intangible nature of the aspect. We managed to scan several because perhaps we had been working quite intensely with these departments for some time, which enable us to speculate about certain assumptions. Of course, verification will be needed if we are going into deeper understanding about these departments' values and beliefs, but in this paper we are going through only those which held strong relevance with the topic of collaboration.

With the collegial culture in the atmosphere, there is a strong conception that individuality is highly appreciated. In this sense, lecturer as individual is free to build his/her own values and sense of scholarship, with



institutional values as guidance or foundation. Creative interpretation of this freedom is a valued art, and everyone respect everyone else's choice of values without any unnecessary confrontation. With this kind of atmosphere, it can be easily understood how individuals perceive collaboration as an individual choice of paradigm, which means that if anyone held an opposition to collaboration, then it is his/her right to do so. People might be discouraged to oppose to such value, but the value of individuality might prevent others from excommunicating those who oppose. This also means that our effort to assert collaboration as an espoused value needs further social validation.

This appreciation toward individuality also bring about another consequence, that is an appreciation toward the capacity of individuals to act and make decision about the values they held. This is the second assumption we came across when we try to assess how individuals in our faculty perceive their colleagues in the context of their capacity to collaborate with others. Intuitively, people asserts that individuals have the capacity to collaborate, regardless of their discipline, socio-cultural characteristics, academic background, or research experience. To exercise this capacity is up to individual's choice, so they might decide to collaborate only when the atmosphere is favourable to it. It means that individuals might deliberately evade to participate in a collaborative activities if they sense possible alternative where collaboration is not required. This is due to the notion that collaboration required harder work than non-collaborative act (as explained in section 4.2 above), and activities that involved inter discipline collaboration expose individuals to different ethics that might work against theirs. Different ethics derived from different values and philosophy that are essential for each discipline to hold on to. These laid at the most basic assumption about the nature of each discipline, which become fundamental in differentiation and specialization of their science.

The fundamental differences in the nature of each discipline is the source of assumption widely held, albeit subconsciously, about the way people from different discipline think. Nobody would assume loudly that they think differently from others because the way people think is not something that anybody can easily decipher and detect. We manage to think so just because we feel so, as the result of intense interaction with people from different departments. We began to wonder if people from different department think differently because we saw that they approach their problem differently, not only from different perspective, but even with different attitude. The variation is greater between department, and less within department, so we think it is safe to conclude that differences in their way of thinking can be traced down from the nature of the discipline of each department.

The last assumption we are aware of is the perception of the departments toward the role of the faculty and their relation to it. The departments have the tendency to assume that it is the faculty that needs the departments so the faculty can exist, and not another way around. This is the exact assumption we try to counter when we assert collaboration as a shared value. We expect to counter balance this assumption so we can establish a healthier relationship between departments and faculty, that is of a more neutral relationship where one is not dependent of the other. Departments can fully support activities in the faculty level, especially in the formal joint activities in research and community services. More importantly, we see that the faculty should become the pool of resources, where lectures and physical facilities can be shared between departments. And this can only be attained when departments understand their position in this form of relationship, and their relation to other departments as well.

Table 1. The Culture of the Faculty

Artifacts	Espoused Beliefs and Values	Assumptions
No explicit statement about collaboration in the faculty's mission/aims statements	An understanding that collaboration is unavoidable in contemporary world	Collaboration is an individual choice of paradigm
Pre-university program that promote interaction between students from different departments	Agreed that interdisciplinarity is the key to solve nowadays problems	Individuals have the capacity to collaborate
Joint programs between Students' Association from different departments	Interdisciplinarity is good when other discipline's role was only as the supporting actor	Will exercise collaboration when the atmosphere is favourable to it
Soft skills development program that cultivate collaboration/interdisciplinary perspective	Operating within and managing an interdisciplinary team requires hard work, so it is best to avoid it	People from different department has a different way of thinking
Curriculum without explicit reference to collaboration or interdisciplinarity	The institute does not facilitate collaborative effort in an administrative sense	Faculty "needs" departments so it can exist
Guest lecturers from different discipline		
Elective courses can be taken from other departments, but no student had taken this opportunity due to various reason		
Flexible budgeting system enable cross-departmental activities		
Interdisciplinary projects by individuals working on personal networking		

## 5. What's Working, What's Not, and Everything In Between

In an effort to analyze the success and failure of our effort to assert collaboration in the activities of our faculty, we reflect on our decisions and decision-making process, including the premises we had considered and our subjective judgement toward the condition at hand. We will look into factors that might contribute in supporting or hindering the achievement of our goal in terms of approach, leadership, motivation, and setting. Considering the outcome of the effort, we cannot say that we had achieved our goal in term of the desired level of collaboration, despite some minor successes in several situation. Our basic aim is to establish a collaborative atmosphere in the faculty, in a sense that we try to develop a faculty that works on an interdisciplinary basis. We saw collaboration here simply as an act to carry out our basic activities. This is the first thing we notice that might contribute to our unsuccessful effort: an oversimplification of the notion of collaboration. We should not have assumed from the very beginning that collaboration was just an act, or an artifact, but has broader meaning and rooted deeper into the assumption realm. Or if we put it in the idea of isomorphic process by DiMaggio & Powell [7], collaboration should not be exercised just in the coercive process, but in the mimetic and normative process as well.

If we are to consider collaboration as an assumption shared between members of the faculty, then we might as well see that what we were trying to do requires a tremendous change. It involves fundamental change in the way we think, the way we work, the way we relate to other members in the organization, and the way we build and maintain our network. Power, organizational change, and resistance are closely related concept [8-9], thus an organizational change will take effect when power come into play, and resistance will occur in various degree, depends on the degree of change expected and how power is exercised to install such change. Inevitably, this will



raise the question of leadership because leadership is often seen as the manifestation of power. As the manager of the faculty, the amount of power we exerted were limited to the level of installing artifacts that might induce collaboration, but no further. The changes did occurred, but not at the expected level. From table 1 we can see that, while the artifacts suggested that changes to collaborative atmosphere were on its way, some of the espoused beliefs and assumptions contradict this artifacts, and the other beliefs in favour of collaboration are not strong enough to support change. Changes happened at the surface level only, and failed to go deeper into the system, although some of the individuals already agreed on the notion that collaboration is important.

In order to delve deeper into the system, perhaps we should have gained deeper understanding on how our culture worked. The collegial culture of our faculty should be seen as a key factor in choosing what type of strategy we should implement. The model of organizational learning with emphasis on participative design, development, and democratic language would probably be the best alternative to implement because in that model, decision making is based on consultation and the exchange of experiences, ideas, and arguments of all participants [8]. With this model, all members of the faculty will be invited to see themselves, the problems, and how they can participate in solving the problem. In this case, not only individuals will participate willingly, but they will also strongly compel to exercise a new insight into the issue of collaboration. Some of the espoused beliefs and assumptions might be altered, aligning to the already installed artifacts that confirm collaboration. Newer artifacts might be created as the result of this newly established beliefs, such as a revision of normative statements, or in a form of interdisciplinary research projects and community services.

This model might also develop stronger commitment from members of the faculty. Hassan & Rohrbaugh [10] identified two components of organizational commitment: affective and continuance. Such commitments, especially affective commitment, have mimetic properties, which in the end can enable certain value to be shared between members of the same organization [11]. When we look at commitment, we look at the power each individual possess in affecting the achievement of the organization's aim. If collaboration should be established as a shared value, then encouraging the affective commitment of each individual to such value should be promoted by creating social environment characteristics and leadership support and facilitation that affirm collaboration as an expected value, because those two factors can predict the level of commitment from individuals [10]. Bandura's "triadic reciprocity" also emphasized that the interaction between environment, individual, and behaviour exerts influence on the others [6].

Another setting involved in supporting the success of sharing the value of collaboration is what approach should be implemented. Smollan & Sayers [12] suggested that a rather informal personal approach might become an important alternative to the more formal institutional approach. In this sense, we ought to see that individuals have the capacity to act on their own decision regarding whether they are going to collaborate or not, and their decision can be influenced by the decision of their peers. The decision of their peers will reflect the shared value held by the institution, and in order for collaboration to become a shared value, it should be communicated tacitly and explicitly to all members of the organization to reduce possible misinterpretation, which can lead to ambiguity of meaning, thus creating a sense of uncertainty and vagueness. Price & Chahal [9] also noticed that poor communication lead to failure in most change processes. When this process of communication had been established, individuals can understand explicitly what the organization expect from them, as well as their peers. This type of social learning should be promoted, because coercive process will not always work as effective as participative strategies involving mimetic process, especially when dealing with issues where individuals are uncertain as to what activities are subject to discipline or sanction [11]. The communication process can always be held in a less formal settings, and take advantage of the collegial culture of the institution.

The degree of informality is another issue to deal with. From table 1 we can see that collaboration did existed in the form of multidisciplinary project, either as scientific research or community development project. It is important to note, though, that those projects were only took place because individuals from different fields/departments agreed to collaborate on a person-to-person basis, and not institutionalized. This hinted a preference of members of the faculty to work on a less-formal environment. This explain why no formal

collaborative project existed in the faculty. This preference also discourage us to install a more formal interdisciplinary program because we envision that the feasibility of conducting one would be quite low, despite the flexibility of our planning and budgeting system. This is also the reason why we prefer to install a pre-university program as first setting for students for develop network with friends/colleagues from different departments, because it was more manageable and can formally inserted into our annual program. This program also require only minimum effort in asserting collaboration because lecturers participate in this program are those who already shared the importance of working cross-departments. Perhaps we should have employed more individuals whose values are already in line with our notion of collaboration and make them our agents of change. From the perspective of power dynamics, such agents might push forward desired change if given appropriate chance [8].

## 6. Lessons Learned

Organizational culture plays an important role in directing the outcomes of an institution, particularly an academic institution which role is to foster significant changes in the future of human kind. Organizational culture become an important aspect to consider because it shapes and alters values and norms at work in the organization itself. This culture is also to be transmitted between individuals through various ways of learning process that took place in almost all daily activities within the organization. And since socially shared meaning can be created through interaction, routines, and procedures to become taken-for-granted, it has such transferable properties that we have to fully aware of and make it work for us. While many of the staffs convinced that collaboration is the key to solve various problems in the future, to incorporate this basic assumption into our daily action of teaching and researching requires a cultural transformation. In the organizational context, this requires the kind of leadership and strategies unique to our own culture, so as to smoothen the process of transformation. Expectations are organizationally and socially sanctioned, coerced through culture, integrated and perpetuated into a set of institutionalized behavioural patterns. Over time, individuals may internalize expected behaviours and take them for granted, thus moving the behaviours from the realm of the coerced to the normative [11].

Higher education institution poses two important aspect in management, namely educational management and institutional management. Educational management is unique to education institution because it has different purposes compared to other type of organization. In the domain of educational management, the importance of collaboration should be stressed because such value will play very important role in the future. We should held the assumption that the competence to collaborate, to work in an interdisciplinary setting, will become a prominent competence. In order for us to achieve it, we have to start not from the outset of the curricula, but from the mindset of the teachers. Asserting collaboration as the prime value in the mindset of the teachers requires strategic approach because teachers have unique characteristics that separate them from professional in other field. When teachers assume collaboration as the value, it will change the learning paradigm applied not only in the curriculum, but in the classroom as well. If we are to conduct a more in-depth evaluation of collaboration, Woodland & Hutton [2] offer CEIF or Collaboration Evaluation and Improvement Framework as a tool for evaluators that we can apply in an educational setting.

From the perspective of institutional management, we also have to put forward the institutional policy that assert collaboration. Policy is an artifact that can affect the whole internal culture because it can initiate a coercive process, which might induce change in other process. We need to create a plan that can alter the course of changes into a more collaborative atmosphere in the organization, able to envision the future of our organization within the collaborative culture. We now understand that the three level of culture is intertwine in such a way that managing one will mean intervening the other. The interconnectedness between environment, individual, and behaviour should be our main concern when we put another effort to change a trait of culture. To create advantage, we have to engage in a continuous act of nurturing collaborative processes.

## References

- [1] Lucena, J. C. Flexible Engineers: History, Challenges, and Opportunities for Engineering Education. *Bulletin of Science Technology & Society*, 2003, 23 (6), 419-435.
- [2] Woodland, R. H., & Hutton, M. S. Evaluating Organizational Collaborations: Suggested Entry Points and Strategies. *American Journal of Evaluation*, 2012, 33 (3), 366-383.
- [3] Newswander, L. K., & Newswander, C. B. Encouraging Cognitive Flexibility and Interdisciplinarity in Public Administration Programs. *Administration & Society*, 2012, 44 (3), 285-309.
- [4] Brintnall, M. Toward New Curricula for Public Works Managers. *Public Works Management Policy*, 2001, 5 (4), 281-286.
- [5] Schein, E. H. (2010). *Organizational Culture and Leadership* (4th ed.). San Francisco: John Wiley & Sons, Inc.
- [6] Bess, J. L., & Dee, J. R. *Understanding College and University Organization: Theories for Effective Policy and Practice* (Vol. I: The State of the System). Sterling, Virginia: Stylus Publishing, LLC. 2008.
- [7] DiMaggio, P., & Powell, W. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 1983, 48, 147-160.
- [8] Boonstra, J. J., & Gravenhorst, K. M. Power Dynamics and Organizational Change: A Comparison of Perspectives. *EUROPEAN JOURNAL OF WORK AND ORGANIZATIONAL PSYCHOLOGY*, 1998, 7 (2), 97-120.
- [9] Price, A. D., & Chahal, K. A strategic framework for change management. *Construction Management and Economics*, 2006, 24, 237-251.
- [10] Hassan, S., & Rohrbaugh, J. The Role of Psychological Climate on Public Sector Employees' Organizational Commitment: An Empirical Assessment for Three Occupational Groups. *International Public Management Journal*, 2011, 14 (1), 27-62.
- [11] Kondra, A. Z., & Hurst, D. C. Institutional processes of organizational culture. *Culture and Organization*, 2009, 15 (1), 39-58.
- [12] Smollan, R., & Sayers, J. G. Organizational Culture, Change and Emotions: A Qualitative Study. *Journal of Change Management*, 2009, 9 (4), 435-457.